New England Energy Dashboard Background—Description of Sections

In January 2019, the U.S. Energy Information Administration (EIA) introduced the interactive, daily New England Energy Dashboard (NED) showing energy market conditions in New England to help users examine many key aspects of the New England energy market. These key aspects include

- Fuel diversification
- Wholesale price volatility
- Energy delivery dynamics
- Weather's effect on operations
- Electricity prices' effect on fuel prices
- Regional and on-site fuel stocks

NED integrates our view of the energy commodities—natural gas, electricity, and petroleum products—and factors that can influence energy consumption, prices, flows, and energy security in New England. The dashboard includes detailed regional information on

- Temperatures
- Various fuel prices
- Locational marginal prices
- Electric grid status, outages, and available capacity
- Current and projected load
- Liquefied natural gas (LNG) imports
- Electricity generation fuel mix
- Interregional electricity transmission and natural gas flows
- Petroleum product stocks

Energy delivery infrastructure constraints and outages can have a pronounced influence on New England's wholesale energy prices, energy flows, and operations. As a result, NED illustrates these constraints, including

- Nuclear generating capacity availability
- Real-time locational marginal prices by Independent Service Operator New England (ISO-NE) zone and electric interface
- Electricity generation outages and reductions
- A map indicating natural gas pipeline capacity use at key flow points

Energy systems in a country as large as the United States must be managed regionally because of varying resources, delivery infrastructure, and consumption patterns. Extensive discussion of electricity reliability as a result of the *bomb cyclone* event in New England during the winter of 2017–18 within the U.S. Department of Energy, and notably at the EIA Energy Conference, underscored the interest in and need for a regional energy dashboard. NED responds to growing concern about U.S. electricity resilience energy management in the winter in New England.

NED condenses significant timely, contextual information on energy use in New England into a dense, webbased product that includes

- An overview
- Views on key elements of the overall energy system including electricity, natural gas, and petroleum
- EIA staff commentary

NED draws on information that EIA collected and produced or gathered automatically from others to provide a picture of energy supply and use in New England that is as close to real-time as data sources will allow. To

support this goal, NED is updated every day no later than 10:30 a.m. Eastern Standard Time. However, some sources of information are updated every five minutes.

This document provides a guide to the sections of NED, including their purpose, the data included, and recommendations for interpretation and use. It also includes a detailed list of data sources used to produce NED.

If you have questions about NED or suggestions for future changes, contact EIA staff at newenglanddashboard@eia.gov.

The NED explanatory notes, sources, and related links documentation is organized into three sections:

- A description of the overview, electricity, natural gas, and petroleum sections of the documentation
- A summary of the sources of information used for NED
- A list of the related links providing additional sources of information about New England market issues and fundamental drivers

Overview Section

The NED Overview section summarizes many indicators and types of visualizations related to New England

- Electric generating capacity availability
- Natural gas flows
- Interchange
- Outages/reductions
- Projected and actual loads
- Commodity prices
- Temperature measurements
- Real-time fuel mix data
- Basis/spark spreads
- Nuclear availability

Key Overview page indicators include:

Today's capacity

This indicator shows the generating capacity that ISO-NE expects to be available for the current operating day, expressed in megawatts. We update this section once a day using an Application Programming Interface (API) call to the ISO-NE *Morning Report*. The *Morning Report* provides ISO-NE's preliminary summary of the expected capacity available to reliably meet the peak-hour electricity demand and reserve requirements to operate the New England power systems .

Current grid status

ISO-NE informs stakeholders about conditions of the New England regional power system by updating the grid status in real-time. EIA accesses the current grid status with an API call to ISO-NE data. Under typical conditions, ISO-NE reports the grid status as *Normal*, meaning the electricity supply is sufficient to meet expected demand plus required operating reserves. However, ISO-NE has many other <u>codes</u> explaining the status of the power system condition, including varying circumstances when the status is not normal.

Today's forecasted peak demand

This indicator reports on the expected peak electric demand for the current operating day and the hour of the day that demand will occur. These values come from data reported to EIA-930.

Current demand

This indicator reflects the most current hourly electricity demand data for the New England balancing authority that is reported to the EIA-930. This data is updated hourly and is typically about two hours behind the actual time. The current demand indicator will change every hour; as the day progresses, NED users can see how current demand compares with the forecasted peak demand and available capacity for that day.

Yesterday's peak demand

This indicator reports yesterday's peak electric demand and the hour that yesterday's peak demand took place. These values come from data reported to the EIA-930. This number provides a comparison with the current operating day demand.

Historic peak demand

This indicator shows the historic record demand in ISO-NE for each season. NED automatically changes the peak demand depending on whether it is summer or winter. The summer period is assumed to be from April 1 through October 31. By contrast, the winter period runs from November 1 through March 31. If a new historic record is set, NED will automatically transition to a new record indicator, depending on the season.

Generation outages/reductions

Each day ISO-NE reports generator-related outages or reductions affecting the New England power grid. ISO-NE posts a new estimate of these outages each day. EIA obtains that information from the ISO-NE *Morning Report*. Generation outages/reductions are reported in megawatts. ISO-NE does not account for transmission line outages.

Regional nuclear utilization

This indicator shows the regional average availability of nuclear generating units in New England. EIA calculates the average by adding the megawatts of the available units on a given day and dividing that value by total summer or winter generating capacity for those units, depending on the season. Summer-weighting applies to April through October, and winter-weighting applies to November through March. EIA acquires the information each morning from the Nuclear Regulatory Commission (NRC). Two nuclear power plants are currently operating in New England as of June 2019: Seabrook Station and the Millstone Nuclear Power Station. Planned nuclear plant outages are highly seasonal and cyclical. Nuclear plant operators routinely take plants down for maintenance in the spring and fall (called shoulder periods) when electric loads tend to be lower. Further, most nuclear generating plants require fuel recycling every 18–24 months, which can affect the availability of nuclear generation. The unavailability of nuclear generating units can influence locational marginal prices. When nuclear units cannot be dispatched, ISO-NE may dispatch units that require more expensive energy sources, especially in the winter, which can increase locational marginal prices.

Today's peak hour interchange

In the *Morning Report*, ISO-NE reports each day on the expected level of net electric interchange that will occur during the 5:00 p.m. hour. This level provides an indicator of how much electricity interchange is likely to occur between the ISO-NE balancing authority and the NYSIO, Hydro-Quebec, and New Brunswick balancing authorities. The values are expressed in megawatts. Negative values represent imports, and positive values represent exports.

Net natural gas inflows

This indicator shows the estimated level of total daily net natural gas inflows into New England for the current operating day. The flows account for the total amount of natural gas imported into and exported out of New England each day. Because New England is not a natural gas-producing region, it relies on natural gas deliveries from other North American supply areas. This indicator does not include natural gas imports from these liquefied natural gas (LNG) regasification facilities: the Everett LNG Facility and the Northeast Gateway Deepwater Port. Operations at a third facility, the Neptune LNG Deepwater Port, are currently suspended.

Algonquin Citygate basis to the Henry Hub

This indicator measures the daily natural gas spot price spread between the Algonquin Citygate (Boston) price and the Henry Hub price—the nation's primary benchmark location for natural gas price formation. The difference in prices between these two trading hubs can vary significantly depending on several factors, including: seasonality or the time of year, the availability of natural gas pipeline capacity in New England, and the disposition of storms in the Gulf Coast. High basis at the Algonquin Citygate can be a key indicator of weather or outage-related pipeline constraints, which in turn, can affect fuel selection for power generation, electric reliability, and LNG needs

This high basis can require electricity imports and use of natural gas peak-shaving(electricity demand response).

Spark spread

This indicator is a proxy measure for the relative profitability or gross margin associated with operating a natural gas combined-cycle plant in New England with a standard 7,000 British thermal unit heat rate per kilowatthour. To find the heat rate, EIA multiplies the spot price of natural gas at the Algonquin Citygate times 7 and subtracts that value by the spot price of power at Nepool-MA. EIA has made no other adjustments for fixed or variable operations and maintenance costs or for emissions costs. The difference between the on-peak price of power and the heat rate-adjusted spot natural gas price is the spark spread. Higher spark spread values represent potentially greater profits from generating electricity from natural gas combined-cycle plants given the market-clearing price of wholesale power and the price of wholesale natural gas expressed in dollars per megawatthour. EIA publishes spark spreads on its website on trade days on its <u>Today in Energy price page</u>. EIA derives the spark spread for New England based on information from S&P Global Market Intelligence.

Daily spot prices and weekly and annual price ranges—by fuel

These three visualizations show the price of energy commodities in the Northeast region for natural gas, electricity, heating oil, and crude oil more broadly. These prices reflect current spot prices, the range of prices during the past week, and the range of prices for the past year—or for the most recent 365 days. These visualizations show the relationships between energy commodity prices in New England during similar periods. The charts also show how current prices compare with prices during the past week and prices during the past year.

Spot prices are shown for

- Natural gas: Daily spot prices for natural gas at the Algonquin Citygate (Boston), Transco Zone 6 NY (New York City), and TETCO M3 (Texas Eastern's M3 market zone) reflecting prices in Eastern PA, New Jersey, and New York City. Prices are shown in dollars per million British thermal units.
- On-peak electricity: Daily spot bilateral prices for on-peak electricity at the Nepool-MA (Central Massachusetts), PJM West hub (Mid-Atlantic), and New York Independent System Operator Zone J (Manhattan). Prices are shown in dollars per megawatthours. Prices cover only weekday peak hours.
- Crude oil and heating oil: Daily spot prices for crude oil and petroleum products with weekly and annual ranges that are updated each day. Crude oil prices are shown in dollars per barrel, and product prices are shown in dollars per gallon.

The source of information for the natural gas and electricity prices is S&P Global Market Intelligences. The oil-related prices source is Refinitiv, formerly known as Thomson Reuters.

Real-time net generation by energy source

This visualization is based on an API call to ISO-NE's real-time fuel mix information. It shows net generation by energy source for the New England system in megawatthours for the most current reporting interval. The energy source definitions used in this chart are slightly different from those provided by ISO-NE. The reported value in the center of the *donut* chart reflects total generation across all fuel sources for the most recent interval. The timing of the interval updates can vary. ISO-NE's power grid depends on natural gas to meet regional electricity needs. However, when natural prices spike as a result of various constraints, the relative share of natural gas in the dispatch fuel mix can fall in relative terms because of the unavailability or price of natural gas compared with other energy sources. The source of information for the real-time dispatch fuel mix data is ISO-NE.

Daily average departure from previous day's temperature by New England climate division

This heat map shows the average change in temperature in degrees Fahrenheit between yesterday and today. The geographic regions are National Oceanic and Atmospheric Administration (NOAA) climate divisions in New England. This heat map is derived from NOAA temperature data.

Daily average departure from 30-year normal temperature by New England climate division

This heat map represents the difference between average temperatures today in New England by climate divisions compared with the average (30-year) normal temperatures by New England climate divisions. This map shows how current weather differs from long-term norms; significant departures from normal weather can affect energy loads, prices, outages, flows, constraints, and required fuels. This map is derived from NOAA temperature data.

Daily average temperature by New England climate division

This heat map represents average daily temperatures by New England climate divisions. The map shows absolute temperatures in degrees Fahrenheit. The gradient blue colors signify relatively cooler temperatures and the gradient tan colors signify relatively warmer temperatures. This map is derived from NOAA temperature data.

Animation of average temperatures by New England climate division during a 10-day period

This visualization animates daily temperatures by climate region within New England. It shows the most recent five days of history and the most recent five forecast days, including the current day's temperature. NED users can control the display of information by clicking on the *play* or *pause* buttons. This map is derived from NOAA temperature data.

Boston temperatures

This bar chart shows the actual or forecasted high and low temperature range in Boston each day during a 10-day period—five days of historical actual temperature information and five days of forecasted temperature information that includes the current day. It also shows the 30-year normal high and low range for a given day of the year and the relevant historic record high and low for that date. This chart is derived from NOAA temperature data.

Average daily temperatures and departures from normal temperatures by New England states

The heat table provides the average daily population-weighted temperature by state and the departure from the 30-year normal average temperatures for each state in New England on a population-weighted basis. The value reported in each cell of the table measures the average daily temperature by state. The color of each cell indicates whether that temperature is warmer (tan gradients) or colder (blue gradients) than normal. The values are expressed in degrees Fahrenheit. This visualization is derived from NOAA temperature data.

Electricity Section

Current grid status

ISO-NE updates the grid status in real time to provide information about conditions on the New England regional power system. EIA accesses the current grid status with an API call to ISO-NE data. Under typical conditions, ISO-NE reports the grid status as *Normal*, meaning the electricity supply is sufficient to meet expected demand plus required operating reserves. However, ISO-NE has many other <u>codes</u> explaining the status of the power system condition, including varying circumstances when the condition is not normal.

Today's peak load

Today's peak load represents the hour when the peak load is expected to occur based on data supplied to EIA by the ISO-NE Balancing Authority respondent. The hour when the peak load may occur can change from day to day, but usually it occurs in the early evening. The values for the forecasted peak demand and the projected hour comes from data reported to the EIA-930.

Available generating capacity in ISONE for current day

This indicator shows the generating capacity that ISO-NE expects for the current operating day expressed in megawatts. This value is updated once a day using an Application Programming Interface (API) call to the ISO-NE Morning Report. The Morning Report provides ISO-NE's preliminary summary of the expected capacity available to meet the peak hour electricity demand and reserve requirements to operate the New England power systems reliably. ISO-NE's Morning Report explains how total available capacity is calculated.

Day-ahead price

This indicator shows the locational marginal price at the Internal Hub (see New England electricity infrastructure map) determined in the ISO-NE day-ahead market for heavy load hours or any average of the prices from 7:00 a.m. until11:00 p.m. This price is a proxy for the price of electricity in New England. EIA calculates this price based on ISO-NE data. This price is available each day because it is not an on-peak price.

Visualizations

Hourly electricity demand, net generation, and net imports for New England

This chart shows the hourly supply and demand of electricity in New England. Electricity supplied each hour includes the electricity generated within New England and the total electricity imported into the region. If net imports are positive, New England is supplementing its generation with electricity imports from other balancing authorities for that hour. If net imports are negative, New England is exporting more electricity than it is importing from other balancing authorities, which reduces the amount supplied in New England on a net basis for that hour. Although net imports are equivalent to net interchange, for this visualization, they are referred to as imports to explain the daily electricity supply stack in New England. The chart also shows the actual hourly demand and the forecasted demand by hour and by day expressed in megawatthours. Users can select different

default periods for this visualization: two days, two weeks, or one year. The hourly data are only reported for the two-day and two-week options.

The main source of this information is the EIA-930 electric system operating data.

Hourly net generation by energy source for the New England system

This stacked area chart shows the energy source for net generation within ISO-NE each hour expressed in megawatthours. The sources of net generation include:

- Other
- Solar
- Petroleum products
- Coal
- Wind
- Hydroelectric and pumped storage
- Wind
- Coal
- Nuclear
- Natural gas

EIA's other category includes energy sources such as batteries, geothermal, waste heat, wood, and biomass. EIA's energy source definitions are slightly different from those provided by ISO-NE. Users can select different default periods for this visualization: two days, two weeks, or one year. The hourly data are only reported for the two-day and two-week options.

Users can select or deselect energy sources to include in the area chart by clicking on *options* in the legend. When users change fuels to be charted, the cumulative totals automatically change.

The source of information for this visualization is the EIA-930 U.S. electric system operating data.

Hourly locational marginal prices at the ISO New England Hub

This chart shows locational marginal prices (LMPs) at the Internal Hub in New England for the real-time market and the day-ahead market in dollars per megawatthour. In ISO-NE, real-time prices reflect the prices determined in the current operating day for which ISO-NE dispatches resources to provide electric energy and regulation service and, if necessary, commits additional resources. Day-ahead market prices reflect the prices determined by ISO-NE for each hour of the upcoming day on the calendar day preceding the operating day. Users can select different default periods for this visualization: two days, two weeks, or one year. The hourly data are only reported for the two-day and two-week options.

The source of information for this visualization is ISO-NE.

Daily peak-hour electricity load in New England

This chart shows the total megawatts associated with the peak hour or hour of a given day that has the highest actual electric operating load for that day, which comes from hourly data reported to the EIA-930. The peak could be at in any hour of the day but typically represents an early evening hour.

This chart shows the following for the New England balancing authority:

- The current-year daily peak loads
- The previous-year daily peak loads
- The five-year average of peak loads

• The minimum/maximum range of daily peak loads for the most current five-year period

The source of information is the U.S. Energy Information Administration, <u>EIA-930</u> electric operating data and ISO-NE data, mostly for the period before July 2015.

Hourly electricity interchange between New England other balancing authorities

This area chart shows the net hourly interchange between the ISO-NE balancing authority and the Canadian balancing authorities (Hydro-Quebec and New Brunswick) and the New York Independent System Operator (NYISO) in megawatthours. Three interfaces between NYISO and ISO-NE are reflected in the NYISO total interchange number: Roseton, Northport, and Shoreham. ISO-NE is generally a net importer of electricity. Users can select different default periods for this visualization: two days, two weeks, or one year. The hourly data are only reported for the two-day and two-week options.

The source of information is the U.S. Energy Information Administration, <u>EIA-930</u> electric operating data.

Monthly distillate fuel oil stocks held on-site by New England generators

This chart shows aggregate monthly distillate fuel oil stocks held by generators in New England states in million barrels. Reporting typically lags about two months from the current month. This information comes from data reported on the Form EIA-933 survey. This information is summed by region and fuel type, but plant level information is also available.

This chart shows the following items for the New England balancing authority:

- The current-year monthly distillate fuel oil stocks held on-site by New England generators
- The previous-year monthly distillate fuel oil stocks held on-site by New England generators
- The five-year average monthly distillate fuel oil stocks held on-site by New England generators
- The minimum/maximum range of monthly distillate fuel oil stocks held on-site by New England generators for the most current five-year period

The source of information is the U.S. Energy Information Administration Form <u>EIA-923</u>. The survey Form EIA-923 collects detailed electric power data—monthly and annually—on electricity generation, fuel consumption, fossil fuel stocks, and receipts at the power-plant and prime-mover levels.

Monthly residual fuel oil stocks held on-site by New England generators

This chart shows the aggregate residual fuel oil stocks held by generators in New England states on a monthly basis in million barrels. Reporting typically lags about two months from the current month.

This chart shows the following for the New England balancing authority:

- The current-year monthly residual fuel oil stocks held on-site by New England generators
- The previous-year monthly residual fuel oil stocks held on-site by New England generators
- The five-year average monthly residual fuel oil stocks held on-site by New England generators
- The minimum/maximum range of monthly residual fuel oil stocks held on-site by New England generators for the most current five-year period

The source of information is the U.S. Energy Information Administration Form <u>EIA-923</u>. The survey Form EIA-923 collects detailed electric power data—monthly and annually—on electricity generation, fuel consumption, fossil fuel stocks, and receipts at the power-plant and prime-mover levels.

Real-time locational marginal prices by zone and interface in New England

This map shows real-time locational marginal prices and updates every five minutes based on an API call to ISO-NE information. Prices are shown for the major zonal hubs and for the electricity interfaces between ISO-NE and neighboring balancing authorities. Significant changes in prices between zones or interfaces or from one reporting period to the next period can signal constraints or other operating condition changes that may indicate a disruption or emergency.

The source of information for this map is ISO-NE. The map was created by the U.S. Energy Information Administration.

New England electricity infrastructure map

This map shows the New England regional electricity infrastructure including major transmission lines, interfaces with neighboring balancing authorities, electric generating plants by type, and the Internal Hub power trading point.

The source for this map is the U.S. Energy Information Administration <u>U.S. Energy Mapping System</u>.

Natural Gas Section

Demand

This indicator provides an estimate of total daily natural gas consumption in New England from the residential/commercial, industrial, and electric power sectors. IHS Markit is the source of this data. Total daily natural gas consumption is a key element affecting energy flows and prices in New England.

Demand change

This indicator reflects the change in natural gas demand from the previous day. The New England Energy Dashboard provides estimates of natural gas demand and changes in demand every day, including weekends. IHS Markit is the source of this data.

Regional pipeline utilization

This indicator provides a daily estimate of the utilization of the New England natural gas grid. The utilization measures the flow of natural into New England and compares it with estimated delivery capacity. The flow data and regional capacity values are derived from IHS Markit regional flow data for two corridors in New England: the New York-New Jersey-to-New England corridor and the Canada-to-New England corridor. EIA uses this information to assess natural gas flows relative to estimated regional delivery capacity. Natural gas pipeline constraints can significantly affect New England energy prices and energy security.

Spot natural gas price (Algonquin Citygate)

This indicator shows the most recent spot price of natural gas at the Algonquin Citygate (Boston). The Algonquin Citygate price is one of the traditional benchmarks of the price of delivering natural gas into New England in the wholesale market. High spot natural gas prices are a key indicator of market stress in New England. S&P Global Market Intelligence is the source of information for the Algonquin Citygate price.

Visualizations

Daily natural gas consumption by sector in New England

This area chart shows the estimated daily natural gas consumption for residential/commercial, industrial, and electric power sectors in New England in billion cubic feet per day. Analysts can use the tabs to create a chart for the past two weeks or the past year.

The source of information for this chart is IHS Markit. More detailed information is available from the OPIS Point Logic Northeast Gas Fundamentals Daily report. Data for this chart cannot be downloaded.

Daily deliveries of liquefied natural gas in New England

This line chart provides estimated daily send-out (delivery) of liquefied natural gas at the two operational facilities in New England: Everett or Northeast Gateway terminals. The estimates include third-party assumptions about local LNG transferred from the Everett terminal by truck in billion cubic feet per day.

The source of information for this chart is IHS Markit. More detailed information is available from the OPIS Point Logic Northeast Gas Fundamentals Daily report. Data for this chart cannot be downloaded.

Net daily natural gas flows into New England

The area chart shows the estimated daily net natural gas flows into New England expressed in billion cubic feet per day. This graph reflects two major sources of deliveries into New England: net flows from Canada (mostly on the Maritimes & Northeast Pipeline and the Portland Natural Gas Transmission System) and net natural gas flows from New York/New Jersey into New England on the Algonquin, Tennessee, and Iroquois pipelines.

The source of information for this chart is IHS Markit. More detailed information is available from the OPIS Point Logic Northeast Gas Fundamentals Daily report. Data for this chart cannot be downloaded.

Total daily natural gas consumption in New England

This multi-year chart shows estimated total daily natural gas consumption across sectors in billion cubic feet per day. The chart includes consumption from the residential/commercial, industrial, and electric power sectors. This measurement is a proxy for total regional natural gas consumption; it excludes losses from pipeline operations or fuel use to operate the pipeline. The chart shows

- The current-year natural gas consumption
- The previous-year natural gas consumption
- The five-year average natural gas consumption
- The minimum/maximum range of natural gas consumption for the most current five-year period

The source of information for this chart is IHS Markit. More detailed information is available from the OPIS Point Logic Northeast Gas Fundamentals Daily report. Data for this chart cannot be downloaded.

Daily spot price of natural gas at the Algonquin Citygate

This line chart shows the spot price of natural gas at the Algonquin Citygate expressed in dollars per million British thermal units. It displays prices for the current year and previous year. The Algonquin Citygate is a commonly referenced benchmark price for delivered natural gas in New England. Because it represents a delivered commodity price, this price reflects constraints on the natural gas system, especially in the winter.

The source of information for the wholesale spot price at the Algonquin Citygate is S&P Global Market Intelligence. Data for this chart cannot be downloaded.

Daily electricity generation from natural gas in New England

This daily double-axis line chart shows the amount of megawatts generated by natural gas-fired units in ISO New England and the natural gas share of total generation produced within ISO New England each day. The daily natural gas generation share is derived from EIA-930 data.

The source of information for this chart is the U.S. Energy Information Administration, EIA-930 U.S. electric system operating data. See the <u>EIA-930 User's Guide</u> for more details.

New England natural gas infrastructure map

New England regional natural gas infrastructure map shows the locations of LNG regasification terminals, major natural gas pipelines, the Algonquin Citygate trading point, and natural gas constraint points. The map shows daily natural gas flows and changes in million cubic feet per day. It also shows the utilization percent of the natural gas network at locations in New England or adjacent market locations that affect the regional availability of natural gas supplies.

IHS Markit is the source of the natural gas flow information. Point Logic acquires much of this data by scraping the Informational Postings disseminated by interstate natural gas pipeline on their electronic bulletin boards. EIA calculates the daily change in flow and estimated utilization at each flow point. The utilization measure reflects the daily flow divided by a reported or determined value and represents the capacity at a given pipeline location. If a natural gas pipeline capacity value at given point is unavailable, EIA estimates a historic maximum by reviewing daily data trends.

Petroleum Section

Distillate stocks (Petroleum Administration for Defense (PADD) 1A)

This indicator shows the most current weekly distillate stocks information for New England. Distillate oil availability is key to New England's heating and electricity markets. The source of this information is the U.S. Energy Information Administration.

Distillate stock change from previous week (PADD 1A)

This indicator shows the change in distillate stocks in New England compared with the previous week. The source of this information is the U.S. Energy Information Administration.

Spot New York Harbor heating oil price

The spot price of New York Harbor heating oil is a proxy for the price of Northeast heating oil on days. This heating oil price is a key fundamental that can influence fuel selection in the New England electricity market and indicate stress in the market as a result of supply chain logistics. The source of this information is Refinitiv, formerly Thomson Reuters. See historical information for this indicator on EIA's website.

Visualizations

Weekly distillate oil stocks in New England (PADD 1A)

The multi-year range chart shows weekly distillate oil stocks in New England (PADD 1A) in million barrels. These data are typically updated on Wednesday at 10:30 a.m. Eastern Standard Time as part of the *Weekly Petroleum Status Report* update. For PADD 1A, this chart shows

- The current-year weekly distillate stocks
- The previous-year weekly distillate stocks

- The five-year average of distillate stocks
- The minimum/maximum range of distillate stocks for the most current five-year period

This source of information for this chart is the U.S. Energy Information Administration, <u>Weekly New England</u> (PADD 1A) Ending Stocks of Distillate Fuel Oil.

Weekly distillate oil stocks in the Central Atlantic (PADD 1B)

The multi-year range chart shows weekly distillate oil stocks in the Central Atlantic region (PADD 1B) in million barrels. These data are typically updated on Wednesday at 10:30 a.m. Eastern Standard Time as part of the *Weekly Petroleum Status Report* update. For PADD 1B, this chart shows

- The current-year weekly distillate stocks
- The previous-year weekly distillate stocks
- The five-year average of distillate stocks
- The minimum/maximum range of distillate stocks for the most current five-year period

The source of information for this chart is the U.S. Energy Information Administration, <u>Weekly Central Atlantic</u> (PADD 1B) Ending Stocks of Distillate Fuel Oil.

Weekly residual oil stocks in New England (PADD 1A)

This multi-year range chart shows weekly residual oil stocks in New England (PADD 1A) in million barrels. These data are typically updated on Wednesday at 10:30 a.m. Eastern Standard Time as part of the *Weekly Petroleum Status Report* update. For PADD 1A, the chart shows

- The current-year weekly residual fuel oil stocks
- The previous-year weekly residual fuel oil stocks
- The five-year average of residual fuel oil stocks
- The minimum/maximum range of residual fuel oil stocks for the most current five-year period

The source of information is the U.S. Energy Information Administration, <u>Weekly New England (PADD 1A)</u> <u>Ending Stocks of Residual Fuel Oil</u>.

Weekly residual oil stocks in the Central Atlantic (PADD 1B)

This multi-year range chart shows weekly residual oil stocks in the Central Atlantic region (PADD 1B) in million barrels. These data are typically updated on Wednesday at 10:30 a.m. Eastern Standard Time as part of the *Weekly Petroleum Status Report* update. For PADD 1B, the chart shows

- The current-year weekly residual fuel oil stocks
- The previous-year weekly residual fuel oil stocks
- The five-year average of residual fuel oil stocks
- The minimum/maximum range of residual fuel oil stocks for the most current five-year period

The source of information is the U.S. Energy Information Administration, <u>Weekly Central Atlantic (PADD 1B)</u> <u>Ending Stocks of Residual Fuel Oil</u>.

Weekly propane and propylene stocks in New England (PADD 1A)

This multi-year range chart shows the weekly propane and propylene stocks in New England (PADD 1A) in million barrels. These data are typically updated on Wednesday at 10:30 a.m. Eastern Standard Time as part of the *Weekly Petroleum Status Report* update. For PADD 1A, the chart shows

- The current-year weekly propane and propylene stocks
- The previous-year weekly propane and propylene stocks
- The five-year average of propane and propylene stocks
- The minimum/maximum range of propane and propylene stocks for the most current five-year period

The source of this information is the U.S. Energy Information Administration, <u>Weekly New England (PADD 1A) Ending Stocks of Propane and Propylene</u>.

Weekly propane and propylene stocks in the Central Atlantic (PADD 1B)

This multi-year range chart shows the weekly propane and polypropylene stocks in the Central Atlantic (PADD 1B) in million barrels. These data are typically updated on Wednesday at 10:30 a.m. Eastern Standard Time as part of the *Weekly Petroleum Status Report* update. For PADD 1B, the chart shows

- The current-year weekly propane and propylene stocks
- The previous-year weekly propane and propylene stocks
- The five-year average of propane and propylene stocks
- The minimum/maximum range of propane and propylene stocks for the most current five-year period

The source of this information is the U.S. Energy Information Administration, <u>Weekly Central Atlantic (PADD 1B) Ending Stocks of Propane and Propylene</u>.

Weekly average price of residential heating oil in New England (PADD 1A)

This multi-year range chart shows weekly average price of residential heating oil in New England (PADD 1A) in dollars per gallon. These data are only available between October and March when EIA publishes its State Heating Oil and Propane Program data. For PADD 1A, the chart shows

- The current-year average weekly residential heating oil prices
- The previous-year average weekly residential heating oil prices
- The five-year average of residential heating oil prices
- The minimum/maximum range of residential heating oil prices for the most current five-year period

The source of information for this chart is the U.S. Energy Information Administration. More information can be found at EIA's <u>Winter Fuels Explanatory Notes</u> and <u>Heating Oil and Propane Update</u>.

Weekly average price of residential heating oil in the Central Atlantic (PADD 1B)

This multi-year range chart shows weekly average price of residential heating oil in the Central Atlantic region (PADD 1B) in dollars per gallon. These data are only available between October and March when EIA publishes its State Heating Oil and Propane Program data. For PADD 1B, the chart shows

- The current-year average weekly residential heating oil prices
- The previous-year average weekly residential heating oil prices
- The five-year average of residential heating oil prices
- The minimum/maximum range of residential heating oil prices for the most current five-year period

The source of information for this chart is the U.S. Energy Information Administration. More information can be found at EIA's Winter Fuels Explanatory Notes and Heating Oil and Propane Update.

Weekly average price of residential propane in New England (PADD 1A)

This multi-year range chart shows weekly average price of residential propane in New England (PADD 1A) in dollars per gallon. These data are only available between October and March when EIA publishes its State Heating Oil and Propane Program data. For PADD 1A the chart shows

- The current-year average weekly residential propane prices
- The previous-year average weekly residential propane prices
- The five-year average of residential propane prices
- The minimum/maximum range of residential propane prices for the most current five-year period

The main source of information for this chart is the U.S. Energy Information Administration. More information can be found at EIA's <u>Winter Fuels Explanatory Notes</u> and <u>Heating Oil and Propane Update</u>.

Weekly average price of residential propane in the Central Atlantic (PADD 1B)

This multi-year range chart shows the weekly average price of residential propane in the Central Atlantic region (PADD 1B) in dollars per gallon. These data are only available between October and March when EIA publishes its State Heating Oil and Propane Program data. For PADD 1B the chart shows

- The current-year average weekly residential propane prices
- The previous-year average weekly residential propane prices
- The five-year average of residential propane prices
- The minimum/maximum range of residential propane prices for the most current five-year period

The main source of information for this chart is the U.S. Energy Information Administration. More information can be found at EIA's <u>Winter Fuels Explanatory Notes</u> and <u>Heating Oil and Propane Update</u>.

Spot New York Harbor heating oil price

This chart shows trends in the spot price of heating oil at the New York Harbor. These daily prices are only reported for trade days. The chart shows the following prices

- Current-year prices
- Previous-year prices
- Five-year average of prices
- Minimum/maximum range of New York Harbor heating oil prices for the most current five-year period

The source of information for these prices is Refinitiv (formerly known as Thomson Reuters). These data are available on EIA's website under New York Harbor No. 2 Heating Oil Spot Price FOB.

New England petroleum infrastructure (PADD 1A) map

This map shows the main sources of petroleum products supplied to New England from PADD 1B, Canada, and other imports. Infrastructure includes bulk terminals, product pipelines, product flows, marine movements, ports, and key urban areas. The map also indicates how petroleum products are transported (rail, truck, barge, tanker). The source of information for this map is the U.S. Energy Information Administration, <u>East Coast and Gulf Coast Transportation Fuels Market</u> report. This map is not routinely updated.

Central Atlantic petroleum infrastructure (PADD 1B) map

This map shows the product supply infrastructure for the Central Atlantic region (PADD 1B). Infrastructure includes bulk terminals, refineries and refinery centers, product pipelines, product flows, marine movements, ports, and key urban areas. The map also indicates how petroleum products are transported (rail, truck, barge, product pipeline, and tanker).

The source of information for this map is the U.S. Energy Information Administration, <u>East Coast and Gulf Coast Transportation Fuels Market</u> report. This map is not routinely updated.

Sources

Data used to prepare the New England Energy Dashboard come from a mix of third-party and U.S. Energy Information Administration sources:

ISO New England (https://www.iso-ne.com) The Independent System Operator of New England (ISO-NE) is a key third-party source of information for NED's locational marginal prices by load zone and interface, real-time fuel mix, capacity operating parameters, power grid status, and outages. Some of these data are updated every five minutes or in real time.

National Oceanic and Atmospheric Administration (www.noaa.gov) NED uses NOAA heating degree day (HDD) and cooling degree day (CDD) data by climate division and by state within New England to create temperature visualizations such as heat maps, bar charts, and heat tables. The NOAA HDD and CDD data used are weighted by population.

Nuclear Regulatory Commission (https://www.nrc.gov/reading-rm/doc-collections/event-status/reactor-status/)
The Nuclear Regulatory Commission (NRC) is the source of daily power reactor status reports for the U.S. nuclear generating fleet. EIA uses this information to calculate the daily regional average nuclear plant operating status for nuclear units in New England.

IHS Markit (www.ihsmarkit.com) Point Logic Energy is part of OPIS (Oil Price Information Service) by IHS Markit. IHS Markit is the source of daily natural gas consumption estimates by sector (residential/commercial, industrial, and electric power); natural gas flows by region (New York/New Jersey and Canada); estimated daily LNG send-out; and natural flows by pipeline segment/locations. IHS Markit publishes information in its Northeast Gas Fundamentals Daily (Supply & Demand Analytics for the Northeast Region) product. IHS Markit has established daily natural gas flows between New England and the New York and New Jersey are and between New England and Canada. IHS Markit scrapes information from interstate natural gas pipeline electronic bulletin boards and from other sources to create databases and estimates of natural gas consumption and flows.

Refinitiv (www.refinitiv.com) formerly known as Thomson Reuters. Refinitiv is the source of spot prices for West Texas Intermediate crude oil, Dated Brent crude oil, and New York Harbor heating oil.

S&P Global Market Intelligence (www.sp.com) S&P Global Market Intelligence is the source of spot prices for natural gas at Tetco M3, Transco Zone 6 (New York), and the Algonquin Citygate (Boston) and for on-peak, electricity at PJM West, NYISO Zone J (New York City), and Nepool-Mass (Central Massachusetts).

U.S. Energy Information Administration (<u>www.eia.gov</u>) EIA is the primary source of information for much of the information in NED, including

- Daily estimates of electricity demand, forecasted demand, net generation and interchange by balancing authority from EIA-930 electric operating data.
- Daily peak load across all hours by balancing Aathority derived from EIA-930 electric operating data.
- Net generation by fuel source by balancing authority from EIA-930 electric operating data.
- Daily natural gas generation and shares of total generation derived from EIA-930 electric operating data.
- Estimates of weekly distillate, residual fuel oil, and propane and propylene stocks in PADDs 1A and 1B.
- Estimates of monthly residual fuel oil stocks and distillate stocks held on-site by generators in New England derived from the EIA-923.
- Estimates of weekly residential heating oil and propane prices in PADD 1A and 1B from October through March from EIA's SHOPP program.

• Estimates of weekly net changes in underground natural gas storage inventories for the Lower 48 states and by storage region.

Geospatial information for natural gas, electricity, and petroleum for the U.S. EIA mapping system.

Commentary/Related links

Commentary

EIA will occasionally include short posts on the daily *New England Energy Dashboard* discussing regional price volatility, changes in the fuel mix to produce electricity, constraints, petroleum stock levels, and energy flows. The posts may introduce new visualizations and sources of information.

Related links

NED provides a series of links to help stakeholders find more detailed information about the New England market. Links include information about electricity, natural gas, petroleum products, and multi-fuel sources. The sources include EIA and non-EIA sources of energy and related information. These additional links include:

Electricity

- ISO-NE real-time maps and charts
- ISO-NE current grid status
- ISO-NE daily operations summary
- ISO-NE 21-day oil depletion outlook
- ISO-NE 7-day load outlook
- ISO-NE 7-day wind power forecast
- ISO-NE glossary/acronyms
- EIA 930 ISO-NE data
- EIA 930 main website
- EIA 930 User Guide
- EIA Status of U.S. Nuclear Outages
- EIA Electricity Monthly Update

Natural Gas

- Natural Gas Pipeline Critical Notices:
 - Algonquin
 - Iroquois
 - M&N Pipeline
 - Portland
 - Tennessee Gas
- EIA Weekly Natural Gas Storage Report
- EIA Natural Gas Weekly Update
- EIA Natural Gas Storage Dashboard
- EIA Natural Gas Pipeline Info

Petroleum

- ISO-NE Oil Depletion Graphs
- EIA New England Weekly Supply
- EIA Heating Oil and Propane Update

- EIA Propane Market Update
- EIA This Week in Petroleum
- EIA Weekly Petroleum Status Report
- EIA Main Petroleum Website

Multi-Fuel

- EIA Energy Disruptions East Coast
- EIA Winter Heating Fuels
- EIA Today in Energy Prices
- EIA Short-Term Energy Outlook
- EIA State Profiles

Weather

- NOAA 3-7 day temp
- NOAA 3-7 day min temp
- NOAA 6-10 day temp
- NOAA 8-14 day temp
- NOAA's 1-month temp